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**EVALUATION OF THE INTERNAL CONTROLS
IN THE FLEET PARTS ROOM INVENTORY**

The City Auditor's Office assessed Fleet's internal controls over their parts inventory and concluded that they are reasonably adequate to safeguard City assets.

**Report No. 9705
June 1998**



June 1, 1998

To the Most Honorable Sam Kathryn Campana, Mayor
and the Members of the Scottsdale City Council

Transmitted herewith is the report of our evaluation of internal controls related to City of Scottsdale Fleet Management Division inventory, *Evaluation Of The Internal Controls In The Fleet Parts Room Inventory*, Report No. 9705. This work represents one segment of a Fleet internal services fund audit which is an approved project on the City Auditor's 1997/98 Audit Plan.

As a result of our testing, we found no indication of any intentional diversion of City assets. We concluded that Fleet parts inventory controls are reasonably adequate to ensure that ATRAC, the inventory automated database, accurately reflects parts received, shop supplies, and parts given out. We also found that insufficient information was recorded on repair orders to allow us to make an independent determination regarding the appropriateness of removal of tires from inventory. We recommend that Fleet management determine whether internal controls are adequate to properly account for tire usage by vehicle, and implement independent review of the appropriateness of tire usage. We also recommend that inventory procedures should be strengthened. The Fleet Management Director and the General Manager, Municipal Services, reviewed this report and submitted written responses which can be found in Appendix B.

If you need additional information or have any questions, please feel free to contact us at 994-7756.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Cheryl Barcala", is written over a horizontal line.

Cheryl Barcala, CPA, CIA, CFE, CGFM
City Auditor

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Report No. 9705**

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Evaluation of the Internal Controls in the Fleet Parts Room Inventory Action Plan

No.	MANAGEMENT RESPONSE		IMPLEMENTATION STATUS		RECOMMENDATION(S)
	AGREE	DISAGREE	UNDERWAY	PLANNED	
1	X		X		The Fleet Management Director should: Require all regularly stocked parts, whether new, rebuilt/reconditioned in-house, or free, to be marked with a City part number, entered into the inventory, and tracked as long as they have not been issued for use. This should include new spare tires, all cleaned air filters, warranty rebuilds and repairs, and cylinders.
2	X		X		Require a systematic review of the on-hand parts to be conducted periodically to remove and dispose of obsolete or unneeded inventory as early as possible to maximize any cost recovery.
3	X		X		Establish a base inventory of tires, and an on-going inventory system, for the tire shop and tire truck, and require periodic verification of on-hand quantities to inventory records.
4	X		X		Establish acceptable thresholds for inventory shortages or overages based on the nature of specific parts and the materiality of the discrepancies, and require parts room personnel to research, identify, and document the cause(s) of discrepancies between physical assets and inventory records.
5	X		X		Require the maintenance of current and comprehensive inventory procedures and periodically verify that the procedures are followed.
6	X		X		Require the development of parts usage reports, by vehicle and type of vehicle, and the implementation of a process to identify and research situations in which parts usage deviates significantly from the norm.

EXECUTIVE SUMMARY

In January 1998, the General Manager, Municipal Services, requested that we assess the adequacy of the Fleet Management Division's parts inventory controls. A Fleet internal services fund audit is an approved project on the City Auditor's 1997/98 Audit Plan. To respond to the General Manager's request, we initiated work on one audit segment concerning inventory controls, immediately.

The objective of the audit segment was to determine whether or not the processes and controls in the Fleet parts inventory system adequately safeguard City assets. Field work was begun on January 28, 1998, and concluded March 9, 1998. To assess parts inventory control adequacy, we reviewed written inventory procedures and interviewed responsible staff to obtain an understanding of the controls. We then performed substantive tests.

Results In Brief

During our audit, we found no indication of any intentional diversion of City assets. *We determined that the internal control structure is reasonably adequate to safeguard City assets.* As a result of our testing, we found that Fleet parts inventory controls are reasonably adequate to ensure that ATRAC, the inventory automated database, accurately reflects parts received, shop supplies, and parts given out.

Our conclusions, regarding the adequacy of the Fleet parts inventory system internal control structure, are based upon the results of tests that were designed to provide sufficient evidence that the controls in place are effective. These tests included a verification (based on random sampling) of the physical inventory compared to the records.

During our audit, we identified a condition which merits additional review, but which was outside the scope of this audit. This condition relates to internal controls over tires, and tire usage once they are taken off of the inventory. One of the audit steps was to verify that tires were appropriately removed from the inventory. During this test, we found one solid waste truck was charged with 72 tires in a 215-day period. When we looked at the supporting documentation, we found that there was insufficient information recorded on the repair orders to allow us to make an independent determination regarding the appropriateness of the tire usage. We recommend that the Fleet Management Director initiate a review of the tire controls, and determine whether sufficient controls and procedures are in place to properly account for tire usage by vehicle. A process should also be implemented that would allow someone independent of

the tire program to track, review, and periodically verify that tire usage, as reported on repair orders, is appropriate.

In addition to this issue, our audit identified opportunities to strengthen controls, such as:

- 1) Requiring all regularly stocked parts, whether new, rebuilt/reconditioned in-house, or free, to be marked with a City part number, entered into the inventory, and tracked as long as they have not been issued for use. This should include new spare tires, all cleaned air filters, warranty rebuilds and repairs, and cylinders.
- 2) Requiring a systematic review of the on-hand parts to be conducted periodically to remove and dispose of obsolete or unneeded inventory as early as possible to maximize any cost recovery.
- 3) Establishing a base inventory of tires, and an on-going inventory system, for the tire shop and tire truck, and conducting periodic verifications of on-hand quantities to inventory records.
- 4) Establishing acceptable thresholds for inventory shortages or overages based on the nature of specific parts and the materiality of the discrepancies, and requiring parts room personnel to research, identify, and document the cause(s) of discrepancies between physical assets and inventory records.
- 5) Requiring the maintenance of current and comprehensive inventory procedures and periodically verifying that the procedures are followed.
- 6) Requiring development of parts usage reports, by vehicle and type of vehicle, and implementing a process to identify and research situations in which parts usage deviates significantly from the norm.

Background

At the time this audit was completed, the Fleet parts inventory consisted of approximately 2,800 different part types, with a value of almost \$300,000. The inventory is maintained to reduce down-time necessary for equipment repairs and on-going preventative maintenance programs. The parts are stored in the parts room at the Corporation Yard, and in the

City warehouse. In addition, a supply of tires is maintained in the tire shop and on the tire truck, for enhanced customer service. The parts room is open seven days a week, and is usually attended by a parts specialist. Written procedures exist which set out processes to be followed.

The Fleet inventory process follows the basic pattern 1) receive and record parts, 2) issue and record parts, and 3) count and record parts. Inventory records are automated on a MAPPER (the City-wide mainframe program) application called ATRAC. In receiving, parts which are ordered and received from vendors may be restock items for the City's standing inventory, or may be special orders for needed parts which the City does not stock. All regularly stocked parts are received and recorded into ATRAC by parts room personnel. Procedures require that each part stocked be marked with a City part number. Special order parts are not entered into ATRAC. Vendors, at times, may also provide free parts. The parts room practice is not to enter these on ATRAC, but they may be shelved with other similar items in the parts room.

In issuing parts, parts specialists list them on a manual log which is input at least once daily to update ATRAC quantities. Parts specialists also manually record parts issued on hard copy repair orders presented by Fleet mechanics. *Parts which are considered consumable shop supplies* such as Armor-All, are recorded when issued into a "virtual vehicle" repair order. Additional special procedures are used for tires. The parts specialist signs the tires out in a tire log book, a manual record of tires issued. Both the tire's size and City part number are recorded. For tires with 20-inch or larger rims, the unique tire brand is recorded. As well, any new tires received in inventory must be recorded into the tire log.

Parts are also counted for control purposes. To verify that ATRAC information is accurate, Fleet uses a systematic inventory control process which requires parts room personnel to count the on-hand quantities for at least 140 different part types each week. This process, Continuous Inventory Verification (CIV), is intended to fully count the entire parts inventory three times a year. The procedures permit appropriate segregation of duties between the person verifying the assets and the person administering the records. In cases in which the count does not match the record, the system asterisks the entry. If the discrepancy is the result of a miscount, parts room staff must perform an inventory adjustment, because the system does not permit deletion of the previous entries. This safeguard generates an audit trail for changes to the records. A minimum on-hand quantity for each part is set in ATRAC, and is used as the threshold to trigger restocking purchase orders.

ATRAC provides readily accessible information regarding availability of on-hand parts, as well as routine management reports. Each week, reports are generated from ATRAC to indicate the week and the year-to-date parts activity, including total inventory balances, restocks, returns, parts issued, and adjustments. These reports are distributed to the Fleet Management Director as well as to Financial Services, which maintains the City's financial record of inventory. Financial Services uses the weekly reports of parts activity to reduce the inventory and record the expense. Invoices are forwarded to Financial Services for payment and are recorded in the inventory record maintained by Financial Services. With this process, the actual payment of invoices for parts inventory is tracked separately from the record of parts received. While not currently undertaken, periodic reconciliation of these two separate inventory records would provide a means of verifying that all inventory items, purchased and paid for by Fleet, were actually received into the automated Fleet inventory system.

In addition to these management reports, the system generates daily activity reports which detail the prior day's additions and reductions in inventory, as well as the result of daily inventory counts. Parts with negative on-hand quantities are identified by ATRAC. Other reports indicate parts issued each month. ATRAC also allows as-needed queries of a specific part's history.

We spoke, by telephone, with parts supervisors working for three organizations in the metropolitan area to learn about controls in their fleet parts inventory. Controls used by the City appear to be consistent with those used by the other organizations. Two of the organizations use a commercial software program, Multiforce, for their automated inventories. Salt River Project and the City use applications developed in-house. All of the organizations, except for Salt River Project, require the mechanic to present a repair order with the vehicle identification number and a repair order number to authorize parts given out. At Salt River Project, the mechanic verbally requests the parts, and parts room staff complete the repair order on the system. Alternatively, if the parts room is not attended, the mechanic will sign the parts room log, and take the part, as the parts room is not locked. The City is the only organization which does not record into inventory parts which are repaired in-house.

The chart below shows controls used by City of Scottsdale, City of Tempe, City of Phoenix, and Salt River Project.

Control	Scottsdale	Tempe	Phoenix	Salt River Project
Automated database of parts in stock	√	√	√	√
Manual parts requisition form used which has the repair order #, is presented by fleet mechanics as authorization for parts to be issued	√	√	√	No
Annual full physical inventory	No	√	√	√
Continuous inventory verification	√	No	√	No
Free parts are recorded into the inventory	No	√	√	No
Parts repaired by outside vendors are recorded in inventory	√	√	√	√
Tires are inventoried when out for repair	√	√	√	No
Special inventories/spot checks run to research and reconcile shortages	√	√	No	√
SOURCE: Audit analysis.				

**Fleet Inventory
Controls Should Be
Enhanced To
Improve The
Reliability Of
Parts Inventory
Data**

Inventory controls are intended to safeguard City assets. Controls include written procedures for staff to ensure that:

- assets are recorded into inventory as soon as they are received,
- assets are removed from inventory only with appropriate authorization,
- assets are physically safeguarded,
- records of assets are maintained accurately, and
- periodic comparisons between assets and records are made.

We verified that procedures and controls over the parts inventory are reasonably adequate to safeguard City assets. Improvements are needed in the reliability of information on the Fleet automated inventory system. Although there are written procedures which we verified that staff adhere to, we determined through testing that the inventory records do not provide reliable information about inventory variance.

This has occurred because:

- Current practice does not result in all regularly stocked parts, whether new, rebuilt in-house, or no cost, being marked and recorded into inventory.
- Procedures do not require that the tires in the tire shop and on the tire truck be recorded and tracked, nor do they require that repair orders accurately reflect tires issued to the correct vehicle.
- Procedures do not require that adjustments to the automated inventory records, as a result of physical inventory counts, be adequately researched and documented.
- Fleet policies and procedures are not comprehensive and have not been kept current.

To enhance the City's inventory controls, the Fleet Management Director should require that:

- all regularly stocked parts be marked with the appropriate City part number and entered into the inventory system;
- a systematic review of the on-hand parts be conducted periodically to remove and dispose of obsolete or unneeded inventory as early as possible to maximize any cost recovery;

- a base inventory and an on-going inventory system be established for tires in the tire shop and on the tire truck;
- acceptable thresholds for inventory shortages or overages be established based on the nature of specific parts and the materiality of the discrepancies;
- parts room personnel research, identify, and document the cause(s) of discrepancies between physical assets and inventory records;
- written policies and procedures be updated and kept current to reflect practices;
- periodic verifications take place to assure that written procedures are being followed; and
- parts usage reports be developed, by vehicle and type of vehicle, and a process to identify and research situations in which parts usage deviates significantly from the norm be implemented.

These issues are discussed in the following sections.

**Procedures Should Require
That All Parts Are Marked
And Entered Into Inventory**

To facilitate verification, inventory procedures should require that all parts, which are on the shelves and available for issue, be marked with the appropriate City part number and entered into inventory records. Some inconsistency in how Fleet handles repaired or warranty parts relative to marking and recordation was apparent. According to Fleet staff, the current practice, for items repaired in-house, is to shelve the item in the parts room and make it available for use, but not record the item in the inventory record. We also found that warranty parts or parts refurbished by outside vendors are not consistently recorded in the inventory record.

Inconsistent practices regarding marking and recordation caused us difficulty in reconciling on-hand parts to ATRAC records. For example, during our inventory verification of one type of battery, we found more on-hand than were recorded in ATRAC. This overage was explained as the result of stocking warranty repaired or replaced batteries in the parts room, but not recording them into ATRAC.

Another example of reconciliation difficulties that arise from Fleet practices relates to handling of cylinders. We selected 15 different cylinder types for verifying the on-hand quantities to inventory records. The inventory on-hand for 3 of those did not agree with ATRAC records. We found cylinders were not consistently marked with a City part number. In one instance, 2 cylinders were marked, but displayed the wrong part number.

Fleet staff also stated that cylinders rebuilt in-house are not recorded into ATRAC, but are commingled with cylinders which are. The failure to adequately identify parts with the correct part number and to consistently record items into inventory records has the potential to result in discrepancies between on-hand counts and ATRAC records.

These issues also make it difficult for the parts specialists who conduct periodic inventory verifications. Parts specialists may not know whether or not to include a particular item into the count, and parts which do not have a part number or have an incorrect part number may be erroneously omitted or included. As a result, counts could be inaccurate or inconsistent between one verification and another. If the periodic inventory verification is not accurate, an incorrect adjustment in the inventory records would be made.

Inconsistent practices in placing items in inventory also has the potential to affect the cost of repairs. This occurs because:

- 1) the item must be placed into inventory, or treated as a special order item, in order for the system to assign a cost to the repair order, and
- 2) expenses associated with uninventoried parts may be assigned to inventoried parts, thereby overstating the cost of those items.

The costs associated with these types of parts would not be accurately reflected on repair orders. As a result, information which is used to establish the cost of repairs by vehicle, vehicle type, or department may be incorrect.

We recommend that all regularly stocked parts, whether new, rebuilt/reconditioned in-house, or free be marked with a City part number, entered into the inventory, and tracked as long as they have not been issued for use. This should include new spare tires, all cleaned air filters, warranty rebuilds and repairs, and cylinders.

**Obsolete Or Unneeded
Inventory Should Be Disposed
Of In A Timely Fashion**

The parts inventory maintained by Fleet represents an asset to the City. As such, it requires a minimum level of safeguarding to assure its continued existence. In order to reduce the resources necessary to conduct the periodic verifications, the parts inventory should be maintained at the minimum acceptable level. In addition, because each part has a value which generally declines as the part ages, good inventory controls include systematic efforts to identify obsolete or unneeded inventory as

quickly as possible to maximize any potential cost recovery through selling or returning the item for credit.

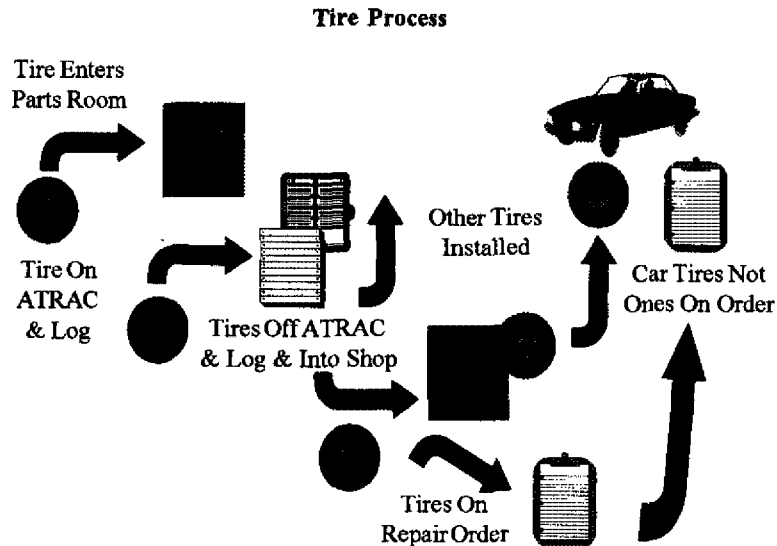
During our audit, we found that Fleet's existing Parts Room Procedures Manual (Procedures Manual) does not assure that items which are obsolete or no longer needed are removed from inventory in a timely manner. As a result of our observations, and based on statements from parts room staff, we found that obsolete parts were maintained in Fleet's on-hand inventory. We also found that more than 42 percent of the part types listed in Fleet's inventory records did not reflect any use of those items within at least the prior 7 months covered by this audit. Under the current Procedures Manual, parts do not get removed from inventory unless 3 years have elapsed from the point of last usage. This process does not take into consideration removal of items which will no longer be needed due to discontinuance of vehicle or equipment type within the City. It also does not take into consideration how quickly the City could obtain a part if an unexpected need arises.

Maintaining obsolete parts within the Fleet inventory results in the unnecessary expenditure of City resources to house, track, and periodically verify that the inventory record still agrees with the number of items on-hand. Maintaining an item in inventory longer than needed increases the potential for asset loss and reduces the possible recovery of any value through sale or return. The longer an unneeded item is kept, the more the City will lose because additional carrying costs, such as inventory control, represent an expense that could be avoided through timely disposal of the item. We believe that Fleet should develop a process that implements a timely, systematic review of the on-hand parts to periodically remove and dispose of obsolete or unneeded inventory. Early identification of unneeded parts could maximize the City's ability to recover any residual value for the items and reduce the inventory carrying cost.

**Tire Inventory Should Be
Established For The Tire Shop
And Tire Truck**

In order to have adequate internal controls in place to safeguard assets, a record of the asset should be created as soon as it is received, and maintained until the asset is used. For tires, this control is not present. Tires are inventoried when received in the parts room, and are recorded in ATRAC. Tires are removed from ATRAC when they are removed from the warehouse, but the tires may not be immediately placed into service on vehicles. Instead the tires may be placed on the rack in the tire shop or on the bed of the tire truck.

During our audit, we found that the current policy does not require tires in either the tire shop or on the tire truck to be recorded and tracked. The following graphic demonstrates the current process for receiving and issuing tires.



SOURCE: Audit analysis.

To facilitate repairs or replacement of tires, the current procedure provides for an on-hand quantity of tires in the tire shop and on the tire truck. Because these tires are taken off of the inventory records when they are removed from the warehouse, there is no documentation of the quantity, or periodic verification of these on-hand tires.

We believe that controls, over tires, could be enhanced by the establishment of a base inventory of tires maintained in those areas. This base inventory of tires should be tied to an on-going inventory system designed to track receiving and disbursement of tires. Further, we believe that periodic verifications should be conducted to verify on-hand quantities to the inventory record.

**Inventory Adjustments Should
Be Researched And
Documented**

A common control over inventory is the periodic reconciliation of the on-hand quantities to the inventory record as a means of identifying discrepancies. Through the establishment of acceptable tolerances and periodic verification, there is assurance that other controls are working as expected. In Fleet, the CIV process provides the periodic verification of the inventory records. According to the Fleet Management Director,

the goal is to maintain a variance of less than 1 percent. ATRAC generated reports indicated that the net variance for the period June 27, 1997, to January 22, 1998, was not quite .08 percent, within the established threshold.

During our audit, we tested Fleet inventory records to determine whether or not the verification process used by Fleet was working. We counted the on-hand quantities of 204 parts using a statistical random sample. We identified 23 line items which did not agree to the inventory records of how many should have been in stock. The 8 items which we considered to be material are shown below. The other 15 items were small or inexpensive parts.

Discrepancy	Explanation
Short:	
2 - 9.50x16.5LT tires	Could not find. No explanation.
8 - P225/79R15 tires	Could not find. No explanation.
4 - 315/80R22.5 tires(part #91109R)	A Senior Equipment Parts Specialist explained that 4 of these tires may have been incorrectly removed from inventory instead of the tire type listed on the repair order. Inventory records for that tire type (part #91108R) had previously been adjusted to correct a negative on-hand quantity.
Long:	
1 - cylinder(part #73358R)	2 cylinders were inventoried as part #73236R but should have been inventoried as #73358R.
2 - cylinders(part #73240R)	2 cylinders which did not display a City part number were identified during the physical count as part #73240R.
4 - cylinders(part #73236R)	May be the result of commingling cylinders. Several cylinders did not display a City part number.
3 - batteries	Batteries which are rebuilt by vendors are not put into inventory records, per Fleet staff, but are commingled with new batteries.
1 - hydraulic pump	Not on the inventory records. No explanation.

SOURCE: Audit analysis.

Based on the number of discrepancies we found between the inventory records and the items actually counted, we estimate that more than 5 percent of ATRAC line items contain incorrect quantities. This means that out of 2,813 items, there would be an expectation that over 141 line items (part types) on ATRAC do not properly reflect the on-hand quantities. Without assurance that the ATRAC system accurately reflects the quantities on-hand, management reports of overages and shortages may not be reliable. As a result, the inventory variance that Fleet tracks may or may not be within the acceptable range of less than 1 percent.

We could not determine why ATRAC is not correct for the 23 instances we identified. The discrepancies may be the result of invalid changes to inventory records through previous CIV adjustments. Inaccurate counts may be the result of storing items, such as tires, in a fashion which can be confusing to count, or from inconsistency in marking items. For example, we observed that tires of the same part number were not physically located together, and that tires were shelved behind one another. In addition, the discrepancies between our counts and ATRAC may also have resulted from Fleet practice of not marking and recording all parts, while we counted all parts on-hand.

Discrepancies in inventory records and on-hand quantities also can result from unintentional errors in completing documentation. In the current system, opportunity for error is greater because the process involves a manual recordation on a give-out sheet, and subsequent keying into the system. For example, a part could be handed out, but not listed on the give-out sheet to effect the removal of the item from the inventory records.

To evaluate the documentation process, we randomly selected 57 vehicle numbers, and obtained all repair orders for those from July 1, 1997, to January 30, 1998. This resulted in the selection of 350 repair orders. We then compared the parts shown on the repair orders to ATRAC. As a result of our testing, we identified 9 exceptions in the comparisons. Six repair orders had parts listed which were not reflected on ATRAC. Two repair orders listed quantities less than the quantities indicated on ATRAC. In all three instances, these were small or inexpensive parts. For one repair order, we could not locate the information detail on ATRAC.

Discrepancies we identified between the count of tires in the warehouse and the ATRAC records may be a result of the current policy of "staging" tires for immediate customer service in the tire shop and on the tire truck. Fleet policy is that the tire log is used to document tires received

and tires issued, and as a means to trace tires to vehicles. Current practice related to the tire shop renders the tire log inaccurate. The tire log would serve its purpose more effectively if it were placed in the tire shop, rather than the parts room, so that it accurately reflected the vehicles the tires were placed on.

For other parts, the usual procedure is that the repair order, with a valid vehicle number, together with the parts give-out sheet, provides accurate documentation of parts transactions. This does not occur with tires. The current practice is for the tire shop to use tires from its on-hand stock to service vehicles. When the tire shop is restocked, and the repair order charged, the type of tires or unique identification number may not match the types of tires which actually were placed on the vehicle. Tires charged to vehicles are the tires that the tire shop receives to replenish its on-hand stock. These complex practices make it difficult to compare physical assets to ATRAC.

We believe a consistent policy that requires all items to be marked and recorded in ATRAC, as well as more thorough documentation of the rationale for material inventory adjustments, will improve ATRAC reliability. In addition to the current variance threshold established on the total valuation of Fleet inventory, we believe that establishing acceptable thresholds for inventory shortages or overages based on the nature of specific parts and the materiality of the individual discrepancies will help parts room personnel weigh the effort required to research discrepancies against the benefits to be achieved. When the effort is warranted, parts room personnel should be required to research, identify, and document the cause(s) of discrepancies between physical assets and inventory records.

**Fleet Policies And Procedures
Should Be Comprehensive And
Current**

Written policies and procedures are a basic internal control for safeguarding assets. These documents are used as a training tool to make sure that all staff know what is required, and also serve as a means to affect consistent inventory controls. We determined through a review of Fleet's Procedures Manual that improvements are needed. Procedures are not current, in that they do not incorporate recent changes in purchasing card use or in the purchasing process for parts. Further, existing practices do not conform to those described in the procedures.

For example, Fleet's Procedures Manual requires that parts and labor related to in-house reconditioned stock be tracked so that a cost can be established when the item is entered into inventory. As discussed earlier,

current practice does not track the costs associated with in-house reconditioning, nor do such items get entered into ATRAC. Additionally, we found that parts room staff practices were inconsistent in recording parts rebuilt or replaced under vendor warranty. In some instances, such parts were placed into inventory at a zero cost while other parts were not recorded into inventory at all. Currently, the Procedures Manual does not address how to handle these items.

We believe that current and comprehensive inventory procedures should be documented in Fleet's Procedures Manual, and that periodic verifications should take place to determine whether or not the procedures are followed.

Unusual Parts Usage Should Be Identified And Reviewed

The inventory controls previously discussed safeguard assets, but are not effective as a means of assuring the appropriate usage of parts. In addition to being concerned that the part is properly tracked through the inventory system, controls need to be in place to make sure that parts are appropriately used once they are removed from inventory. Such controls could be specifically designed to identify trends in abnormal part usage for a particular vehicle or vehicle type. Identifying such situations would provide a basis for further analysis to determine whether or not the usage of parts is being effectively controlled by Fleet's repair order process.

Currently, reports are not available which bring abnormal parts usage to light. Repair orders, containing parts information, are manually filed by vehicle making it difficult to summarize and track parts usage trends. Reports generated from ATRAC do not provide information regarding specific part usage by vehicle, vehicle type, or department.

During our audit, we attempted to verify that tires issued, per ATRAC, were properly supported by repair order documentation, and that the usage for individual vehicles appeared to be appropriate in light of tire usage for similar vehicles. During this test, we found one solid waste truck which was charged with 72 tires in a 215-day period, approximately twice the range of tire usage for similar trucks. We looked at the supporting documentation, and found that there was insufficient information recorded on the repair orders to allow us to make an independent determination regarding the appropriateness of the tire usage. In addition, when we asked Fleet management whether they were aware of the tire usage for this vehicle, we were told that they were not aware of the situation.

Without having the ability to identify abnormal part usage, management may be unaware of instances that merit further review to determine whether corrective actions are necessary. We recommend that the Fleet Management Director require that a parts usage report, by vehicle and type of vehicle, be developed. Once this is available, a process to identify and research situations in which parts usage deviates significantly from the norm should be implemented.

RECOMMENDATIONS

We recommend that the Fleet Management Director, to strengthen controls over inventory, should:

- 1) Require all regularly stocked parts, whether new, rebuilt/reconditioned in-house, or free, to be marked with a City part number, entered into the inventory, and tracked as long as they have not been issued for use. This should include new spare tires, all cleaned air filters, warranty rebuilds and repairs, and cylinders.
- 2) Require a systematic review of the on-hand parts to be conducted periodically to remove and dispose of obsolete or unneeded inventory as early as possible to maximize any cost recovery.
- 3) Establish a base inventory of tires, and an on-going inventory system, for the tire shop and tire truck, and require periodic verification of on-hand quantities to inventory records.
- 4) Establish acceptable thresholds for inventory shortages or overages based on the nature of specific parts and the materiality of the discrepancies, and require parts room personnel to research, identify, and document the cause(s) of discrepancies between physical assets and inventory records.
- 5) Require the maintenance of current and comprehensive inventory procedures and periodically verify that the procedures are followed.
- 6) Require the development of parts usage reports, by vehicle and type of vehicle, and the implementation of a process to identify and research situations in which parts usage deviates significantly from the norm.

ABBREVIATED RESPONSES

The General Manager responded that:

- 1) Fleet Management is currently in the process of entering into inventory all regularly stocked parts. All items that are received by the parts room, whether new, rebuilt/reconditioned in-house, or free are being entered into inventory and marked with a City parts number.
- 2) Fleet is currently working with Information Systems and the Purchasing Division to complete the RFP for a new Management Information System. The new system will improve Fleet's ability [to] remove and dispose of obsolete or unneeded inventory in a shorter time period. The process for recovering cost for these parts should improve.
- 3) The new Management Information System will improve Fleet's ability to track all vehicle/equipment tires. The new system will include a tire management program. We are currently in the process of establishing a base inventory of all tires for the tire shop and tire service trucks.
- 4) The acceptable thresholds for inventory shortages or overages are currently established. We will review the threshold limits after new Management Information System is installed.
- 5) The Parts Room Procedures Manual is currently in the process of being updated. When completed, the updated procedures will be reviewed with all parts room personnel.
- 6) The new Management Information System will give Fleet the ability to do parts usage reports by vehicle and type of vehicle. We will be able to identify and research any parts usage deviation.

APPENDIX

Evaluation of the Internal Controls in the Fleet Parts Room Inventory
City Auditor Report No. 9705

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Objectives, Scope, and Methodology

At the request of the General Manager, Municipal Services, we initiated one segment of a planned audit of the Fleet Internal Service Fund, an approved project on the City Auditor's 1997/98 Audit Plan, to evaluate whether or not the processes and controls in Fleet parts inventory were reasonably adequate to safeguard City assets.

Fieldwork focused on current, as well as historical, parts inventory activity. The scope of the audit included parts transactions occurring between July 1, 1997, and March 9, 1998. Members of Fleet staff, and other cognizant City employees, were interviewed to gain insight into the parts inventory process. Written parts inventory procedures were evaluated. Additionally, random samples of parts transactions and related activities were selected for analysis and verification.

Audit work was conducted in accordance with generally accepted government auditing standards as they relate to expanded scope auditing in a local government environment and as required by Article III, Scottsdale Revised Code §2-117 *et seq*, except that the Office currently does not comply with the requirement regarding peer review frequency. Fieldwork took place in February 1998. Nine substantive tests were conducted. Methodology for each test is discussed below.

Test #1: Physical inventory count compared to ATRAC records.

Objective: To evaluate the reliability of automated inventory records, compared to the counted physical assets.

Method: For purposes of our test, we established a critical error rate (maximum error rate in the universe that we considered acceptable) of 5 percent. Our methodology was designed to determine whether or not parts recorded on ATRAC reflected Fleet's on-hand quantities within the established critical error rate. We determined that the universe of Fleet stocked parts to be 2,813 as of January 27, 1998. Our intent was to review a sufficient sample of those parts to obtain 95 percent confidence that our test results would approximate the characteristics of the universe. Sample selection was also designed to reduce the risk of rejecting an acceptable universe. This consideration led to a larger sample size than would have otherwise been required. We thus determined that a sample of 204 parts would be required. The sample consisted of 51 high dollar items (all parts with a unit cost of \$400 or more). One hundred items were randomly selected from Fleet's inventory records. The remaining

53 items were selected during the physical count. Items in the parts room were selected systematically (every 50th item), while the items in the warehouse were selected on a judgment basis.

Auditors counted and tagged sampled items then, other auditors recounted items to double check work. Counts which differed from ATRAC records were counted again. Inventory quantities were adjusted to account for timing differences in receiving and issuance of parts. If a discrepancy could not be reconciled, the acting parts room supervisor accompanied the auditors to recount the items in question and attempt to resolve the exceptions.

Criteria: With the sampling methodology used, up to 5 unresolved discrepancies, between the physical counts and the corresponding ATRAC records, could be accepted before concluding that inventory records contained an error rate above 5 percent.

Results: We found 23 instances where the inventory records did not agree with the physical count for the sample part.

Test #2 Vehicle and equipment repair orders compared to ATRAC.

Objective: To verify that parts charged to vehicles and equipment, per the repair orders, are accurately recorded in Fleet's automated inventory system.

Method: For purposes of our test, we established a critical error rate (maximum error rate in the universe that we considered acceptable) of 5 percent. Our methodology was designed to provide information on whether or not parts charged to Fleet-serviced vehicles and equipment were accurately recorded into ATRAC within the critical error rate. We determined that the universe of Fleet-serviced vehicles and equipment (without virtual vehicles) consisted of 739 pieces as of January 27, 1998. Our intent was to review a sufficient sample of those vehicles to obtain 95 percent confidence that our test results would approximate the characteristics of the universe. We thus determined that a sample size of 57 would be required. We randomly selected 57 vehicle numbers, and obtained all repair orders for those from July 1, 1997, to January 30, 1998. This resulted in 350 repair orders to review. We then compared the parts shown on the repair orders to ATRAC.

Criteria: Inaccurate recording of parts usage for more than one of the sample items would indicate an unacceptable (out of tolerance) condition.

Because multiple repair orders for each sample item may have been reviewed, a determination of whether parts usage was accurately recorded, on an overall basis for the sample item, required auditor judgment.

Results: Of the 350 repair orders reviewed, we found that 9 of them did not match the parts charged per ATRAC. These 9 repair orders were related to 9 separate vehicles. For 2 of these repair orders, we found that parts were charged in ATRAC but the part did not appear on the repair order. We found that some of the parts charged on 4 of the repair orders were not recorded on ATRAC. Additionally, 2 of the repair orders contained part quantities which differed from those shown on ATRAC. In both cases, the system showed more parts given out than were listed on the repair order. Lastly, we were unable to locate 1 repair order on ATRAC.

Test #3 Review of virtual vehicles records.

Objective: To verify that parts charged to virtual vehicle accounts appeared reasonable and appropriate.

Method: We reviewed 100 percent of all virtual vehicle files for the current fiscal year to date, from July 1, 1997, to March 2, 1998. We compared the virtual vehicle repair orders to ATRAC, and evaluated the items on the repair order for appropriateness as shop supplies.

Criteria: Parts appropriately charged to virtual vehicle accounts are those type items that cannot not be readily identified as benefiting a single specific vehicle. Any trend of inappropriate charges to the virtual vehicle accounts would indicate a potential audit issue.

Results: We reviewed all the repair orders in 142 virtual vehicle files. We found no exceptions related to parts charged to these accounts. We did note that a total of 10 tires, were charged to 2 virtual vehicle "Unknown Tire" accounts. Two of these tires were charged to Fleet and 8 were charged to the Police Department.

Test #4 Purchase order records compared to ATRAC records.

Objective: To verify that parts received were authorized for order, and were properly entered into ATRAC.

Method: We selected 40 days out of 154 days that parts were received by Fleet during the period beginning July 1, 1997, and ending January 31,

1998. We reviewed all of the packing slips/receiving reports that came in on those 40 days and compared the parts and quantities received to those recorded in ATRAC to verify unit cost and quantity were accurately recorded.

Criteria: The parts and quantities received by the parts room should be accurately reflected in corresponding entries into ATRAC.

Results: We reviewed a total of 303 packing slips/receiving reports for 38 days of the 40 days selected. Two days in the sample did not have system-generated inventory status reports available for the test. We could not verify the pricing on 54 of 303 purchase orders because vendor documentation did not contain pricing information. For 9 purchase orders, the dollar value listed in ATRAC did not match the packing slip. The parts quantities per 4 of the packing slips/receiving reports did not match ATRAC. Three of these discrepancies were explained by parts room personnel as possibly the result of free parts or component parts which were either not counted or lumped together as a singular item. One discrepancy could not be explained.

Test #5 Comparison of the Give-Out Sheets to Repair Orders to ATRAC regarding parts issued.

Objective: To verify that automated inventory information is reliable and to verify that internal controls are adequate to deter duplicate entries on the system.

Method: We randomly selected 40 days out of the 215 days that the parts room was open during the period between July 1, 1997, and January 31, 1998. For those days, we pulled the parts give-out sheets. From the sheets, we selected every 30th transaction to review. A total of 80 transactions were selected. We then compared the part and the quantity of the item issued, per the give-out sheet, to the corresponding entry in ATRAC records and to the corresponding repair order.

Criteria: Parts issued per the give-out sheet should be accurately reflected on the corresponding repair order and in ATRAC. Any trends in exceptions would be determined by auditor judgment.

Results: Of 80 transactions reviewed, we could not locate related repair orders for 4 of the transactions. We identified 3 instances in which a part was not listed on the repair order, but was listed on the give-out sheets and on ATRAC.

Test #6 Assessment of whether ATRAC entries are properly supported by documentary evidence.

Objective: To verify that ATRAC information is adequately supported by related documentation and determine whether there was information on the system that could not be traced to a hard copy repair order.

Method: We took the inventory listing dated February 4, 1998, consisting of 86 pages, and selected one part number from every even page. The part number we selected was the item with the year-to-date usage closest to 25. This resulted in a sample of 43 parts. For these parts, we printed out activity history for the months of July 1997 through January 1998. From each parts activity history, we selected the highest give-out transaction and traced it to supporting documentation. We identified the vehicle numbers to which parts were charged, and traced the transactions through the system to verify that the number of parts on the system agreed to the give-out sheets and to the repair orders.

Criteria: The issuance of parts from ATRAC should be adequately supported by a related repair order and by the corresponding give-out sheets. This determination to be made based on trends detected and auditor judgment.

Results: All give-out sheets matched the ATRAC record. For 41 of the 43 parts, the give-out sheet information and ATRAC record also matched the repair order. For 2 parts, listed on give-out sheets, we could not locate corresponding repair orders. One listing was for terminals valued at 96 cents, while the second was for a \$191 siren speaker charged to a Ford Crown Victoria.

Test #7 Review of the inventory balance variance.

Objective: To verify that the CIV net variance reported was internally consistent, and agreed to documentation and determine whether or not information maintained by Financial Services materially differed from ATRAC records .

Method: We obtained and reviewed Fleet's first "Weekly Inventory Status Report" for the current fiscal year. The report covered the period from June 27, 1997, through July 7, 1997. We then obtained the latest available Weekly Inventory Status Report (for the period ending January 22, 1998). We took the beginning inventory balance from the first report and added the value of year to date: parts replaced, new parts added,

returned parts previously issued, and CIV additions per the January 22 report. We then subtracted out the year to date parts issued; parts made obsolete, and CIV subtractions per the January 22 report. We thus derived the ending inventory balance, which we compared to the Fleet weekly inventory ending balance. We then netted the January 22, 1998, year-to-date CIV additions against the year-to-date CIV subtractions for the same period and compared that amount to the corresponding inventory balance to arrive at the year to date inventory variance.

For our next test, completed later in fieldwork, the January 29, 1998, Weekly Inventory Status Report was available. We compared the ending inventory balance per that report to Financial Services' Detail Trial Balance for account 14102 (Motor Pool Inventory Of Supplies) as of January 31, 1998. This test was designed only to identify the potential for material mis-statement between the Financial Services records of inventory balances and Fleet ATRAC inventory balance. Due to timing differences in recording information on ATRAC and processing payments on the Financial Services system, these two records do not agree. The practice of recording value of items on ATRAC based on vendor quotes or packing slips which may not maintain all information will also result in discrepancies between the two systems. As such, we did not attempt to reconcile the two balances but, only to compare the amounts for reasonableness.

Criteria: The information on reports generated through ATRAC should be internally consistent. Additionally, the ATRAC record of Fleet's parts inventory balance should agree with Financial Services' record of Fleet's inventory balance.

Results: Per the January 22, 1998, Weekly Inventory Status Report, the year to date CIV additions were valued at \$6,467 while the CIV subtractions were valued at \$6,687 for a net CIV subtraction of \$220 for the period. Based on an ending inventory balance of \$287,995 for the period, we determined that the net variance per Fleet records was .0763 percent, under Fleet's goal.

In terms of a comparison of Fleet's inventory valuation at January 29, 1998, versus Financial Services' inventory valuation, we found that, after adjustments for timing differences in posting inventory disbursements, the difference was less than \$2,000. Fleet recorded an ending inventory balance of \$292,725 for the period while Financial Services recorded a balance of \$290,748 for the same period.

Test #8 Parts paid for, per City accounting records, verified against parts recorded in ATRAC and, if necessary, to receiving reports.

Objective: To verify that invoices paid by Accounts Payable are supported by Fleet receiving orders and ATRAC entries.

Method: We obtained the "Detail Trial Balances" for account number 14102 (Motor Pool Inventory Of Supplies) for the period beginning July 1, 1997, and ending January 31, 1998. This account tracks payment activity for Fleet's parts stock. We selected a sample of transactions to review by selecting one entry off of every second page of the Detail Trial Balance. The transactions were selected by counting down 10 transactions from the top of the page, and if the transaction was for \$100 or more, we selected it. If it was not, we selected the next closest (physically) transaction that was \$100 or more. We selected a total of 36 transactions to review using this methodology. For each transaction, we obtained purchase order information from the City's financial system (FIRST) as well as the corresponding ATRAC record of parts received and their value. We compared the parts received and amount paid per FIRST to the parts received and their value per ATRAC. In instances where significant discrepancies existed, we obtained receiving report documents from the parts room to try to resolve the differences.

Criteria: Parts paid for, as recorded in the City's financial system, should be accurately recorded into ATRAC.

Results: A total of 36 purchase orders were reviewed which contained 88 different parts types which were received by the City. For 32 of the purchase orders reviewed, the information recorded in the financial system matched the information recorded in ATRAC. For 2 of the purchase orders the dollar values matched between the systems but the financial system recorded a larger quantity of parts than ATRAC did. For 2 other purchase orders, the dollar values matched between the systems but ATRAC recorded a larger quantity of parts than did the financial system. Parts room personnel explained the quantity differences as resulting from the way certain parts are handled and recorded.

Test # 9 Review of ATRAC Tire Records.

Objective: To verify that internal controls over tire issuance were adequate, we verified that ATRAC records of tire issuance were supported by appropriate documentation.

Method: We identified all tires with 50 or more tires issued in the period July 1, 1997, through January 31, 1998. For those tires, we then identified tire usage, by vehicle. Based on this information, we determined that the average tire usage for "large" vehicles (i.e., vehicles using tires with the part numbers 91108R, 91109R, 89777, 89860, and 89367) was between 20 and 30 tires for the period. For the large vehicles charged with 30 or more tires during the period, we traced the tires from ATRAC back to the corresponding repair orders. We followed up with Fleet management to obtain information on tire usage in instances where a vehicle appeared to be using significantly more tires than the average for that period.

We verified that the information from ATRAC agreed to repair orders by selecting those vehicles with more than 30 tires issued to them during the period, and tracing those tires to repair orders. Through this test, 354 tires assigned to 9 vehicles were reviewed.

Criteria: All tires charged out of ATRAC should be supported by repair orders which detail the tire type and quantity charged to a particular vehicle.

Results: We found that 11 out of 354 tires charged out on ATRAC, were not on the corresponding repair orders. We also found that the repair orders contained little or no explanation of the reasons behind tire replacement.

We also found that one solid waste truck was charged with 72 tires in this 215-day period. We could not independently determine based upon information available to us, a reason for what appears to be excess usage. This usage was 30 tires more than the vehicle with the next closest usage and averaged 2 new tires every 2 weeks in 1 month. During the time period reviewed, it received a total of 22 new tires, a quantity sufficient to replace the vehicle's front tires 11 times in 7 months. Approximately 13,000 miles were recorded on this vehicle during that same time period.

APPENDIX

Evaluation of the Internal Controls in the Fleet Parts Room Inventory
City Auditor Report No. 9705

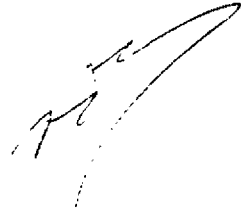
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Management Response

May 27, 1998

TO: Cheryl Barcala, City Auditor
Ramon Ramirez, Senior Auditor

FROM: Al Dreska, General Manager, Municipal Services
John L. Golden, Fleet Management Director



Evaluation of the Internal Controls in the Fleet Parts Room Inventory
Action Plan

No.	MANAGEMENT RESPONSE		IMPLEMENTATION STATUS		RECOMMENDATION(S) RESPONSE
	AGREE	DISAGREE	UNDERWAY	PLANNED	
1	X		X		SEE ATTACHED
2	X		X		" "
3	X		X		" "
4	X		X		" "
5	X		X		" "
6	X		X		" "

ABBREVIATED RESPONSE:

RECOMMENDATION #1

Fleet Management is currently in the process of entering into inventory all regularly stocked parts. All items that are received by the parts room, whether new, rebuilt/reconditioned in-house, or free are being entered into inventory and marked with a City parts number. The Parts Room Procedures manual is in the process of being updated.

- **Completion date for entering all regularly stocked parts into inventory - September 1998**

RECOMMENDATION #2

Fleet is currently working with Information Systems and The Purchasing Division to complete the RFP for a new Management Information System. The new system will improve Fleet's ability remove and dispose of obsolete or unneeded inventory in a shorter time period. The process for recovering cost for these parts should improve.

- **Implementation of new Management Information System - January 1999**

RECOMMENDATION #3

The new Management Information System will improve Fleet's ability to track all vehicle/equipment tires. The new system will include a tire management program. We are currently in the process of establishing a base inventory of all tires for the tire shop and tire service trucks.

- **Completion of tire shop and service truck base inventory - December 1998**

RECOMMENDATION #4

The acceptable thresholds for inventory shortages or overages are currently established. We will review the threshold limits after new management information system is installed. The Parts Room Procedures Manual is currently being updated to reflect and address policy and operational changes.

- **Update Parts Room Procedures Manual - September 1998**
- **Review and establish new inventory threshold limits - January 1999**

RECOMMENDATION #5

The Parts Room Procedures Manual is currently in the process of being updated. When completed, the updated procedures will be reviewed with all parts room personnel. A follow-up review schedule will be established to assure policy and procedures are being adhered to by all parts room personnel.

- **Update Parts Room Procedures Manual - September 1998**
- **Follow-up employee review schedule established - October 1998**

RECOMMENDATION #6

The new Management Information System will give Fleet the ability to do parts usage reports by vehicle and type of vehicle. We will be able to identify and research any parts usage deviation.

- **Implementation of new Management Information System - January 1999**